

DEVICE AND METHOD FOR VARIABLE ATTENUATION
OF AN OPTICAL CHANNEL

ABSTRACT OF THE DISCLOSURE

[0075] A device for variable attenuation of an optical
5 channel includes an elongated core surrounded by a
cladding. Optical energy propagating along the longitudinal
axis of the core is normally confined thereto by the
difference in refractive indices between the core and
cladding. The thermo-optic coefficients of the core and
10 cladding are closely matched such that waveguide
confinement is substantially invariant with respect to
ambient temperature. The device further includes a thermal
source arranged above the core. The thermal source is
operable to generate a temperature gradient of controllable
15 magnitude along a vertical axis extending through the core.
The temperature gradient causes reduction of the local
refractive index within the core relative to surrounding
regions of the cladding such that a portion of the optical
energy is deflected away from the thermal source and
20 extracted from the core.